Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-43 (Canceled)

44. (Currently Amended) An apparatus that is implantable in the vasculature of a subject to treat a vascular aneurysm, said apparatus ~~for treating vascular aneurysms~~, comprising:

at least one expandable stent having fenestrations, said expandable stent comprising a substantially cylindrical body member located between **[[**~~a~~**]]** first and second ends ~~end~~, said cylindrical body member having at least one circumferential element between said first and said second ends ~~end~~ defining an internal lumen in communication with said first and second ends~~, wherein blood is capable of flowing through said internal lumen and flowing radially through said fenestrations into the aneurysm~~;

wherein said at least one expandable stent is expandable between a first diameter D and a second diameter D', wherein D' is larger than D; and

a reactive material on a portion of the stent, said reactive material having a first state of protonation prior to implantation in the body and undergoing a change to a second state of protonation after implantation in the body, said change in the state of protonotion giving rise to expansion of the reactive material and resulting in a decrease in the size of some of the fenestrations such that blood flow through those fenestrations is lessened. ~~selectively applied to not all of said fenestrations of said expandable stent, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow through said fenestrations~~.

45. (Previously Presented) The apparatus of claim 44, wherein said reactive material is an expandable polymer.

46. (Previously Presented) The apparatus of claim 44, wherein said reactive material is a hydrogel.

47. (Previously Presented) The apparatus of claim 45, wherein said reactive material is responsive to pH.

48-53 (Cancelled)

54. (Previously Presented) The apparatus of claim 44 wherein said reactive material is integrally formed with said at least one expandable stent.

55. (Previously Presented) The apparatus of claim 44 wherein said reactive material has a non-reacted volume of V and a reacted volume of V', wherein V' is larger than V.

56. (Previously Presented) The apparatus of claim 55 wherein said reactive material is capable of obtaining a reacted volume V' in the presence of a physiological pH of about 7.4.

57. (Cancelled)

58 (Cancelled)

59. (Withdrawn) The apparatus of claim 44 wherein said expanded stent comprises a radially and axially flexible fenestrated bifurcated stent having a bifurcated body member located between a first end, a second end, and a third end, said bifurcated body defining an internal lumen in communication with said first, second, and third ends.

60. (Previously Presented) The apparatus of claim 44 where said at least one expandable stent is capable of being delivered to a situs in vivo and controllably released from a delivery device, said delivery device selected from the group consisting of catheters, micro-catheters, balloon catheters, expandable catheters, guidewires, wires, and elongated bodies.

61. (Previously Presented) The apparatus of claim 44 where said at least one expandable stent is capable of being delivered to a situs in vivo and controllably released from a delivery device using a controllable release mechanism selected from the group

consisting of mechanical, electrolytic, electro-mechanical, thermal, hydraulic, and shape-memory release mechanisms.

62. (Cancelled)

63. (Cancelled)

64. (Previously Presented) The apparatus of claim 44 wherein said expandable stent is manufactured from at least one biologically-compatible material selected from the group consisting of platinum, gold, tantalum, titanium, stainless steel, tungsten, Nitinol, shape memory alloys, polyurethane, polytetrafluoroethylene, polyvinyl alcohol, polyester, silicone, or acrylic.

65. (Previously Presented) The apparatus of claim 44 wherein said expandable stent comprises radio-opaque materials.

66. (Previously Presented) The apparatus of claim 44 wherein said expandable stent comprises echo-genic materials.

67. (Previously Presented) The apparatus of claim 44 wherein said second diameter D' is substantially equal to a diameter of a receiving blood vessel.

68. (Previously Presented) The apparatus of claim 44 wherein said expandable stent comprises a radially and axially expanding helical stent.

69. (Previously Amended) An apparatus for treating vascular aneurysms, comprising:

at least one expandable, woven stent having fenestrations, said expandable stent further having a cylindrical body member located between a first and second end, said cylindrical body member further defining an internal lumen in communication with said first and second ends, wherein blood is capable of flowing through said internal lumen and flowing radially through said fenestrations into the aneurysm;

wherein said at least one expandable stent is expandable between a first D and a second D', wherein D' is larger than D; and

a reactive material interwoven with said at least one expandable, woven stent, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow through not all of said fenestrations.

70. (Withdrawn) An apparatus for treating vascular aneurysms, comprising:

at least one expandable non-cylindrical support member having at least a first surface; and

a reactive material selectively applied to a portion of said first surface of said support member, said reactive material having a non-reacted state and a reacted state, wherein said first surface is capable of being positioned near an aneurysm and said reacted material in said reacted state is capable of increasing the resistance to blood flow through to the aneurysm.

71. (Withdrawn) The apparatus of claim 70 wherein said at least one expandable non-cylindrical support member comprises a radially and axially flexible body member, said body member having a first radius of curvature R and a second radius of curvature R', wherein R' is larger than R.

72. (Withdrawn) The apparatus of claim 71 wherein said second radius of curvature R' is substantially equal to a radius of curvature of a receiving blood vessel.

73. (Withdrawn) The apparatus of claim 70 wherein said at least one expandable non-cylindrical support member comprises:

at least one intra-aneurysmal neck bridge device having a bridge body member in communication with at least two engagement members;

said at least two engagement members cooperatively forming a joint; and

wherein said reactive material is selectively applied to said engagement members, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow to the

aneurysm.

74. (Withdrawn) An apparatus for treating vascular aneurysms, comprising:

an expandable vascular patch device having a radially and axially flexible patch body member comprising a plurality of interlocking support members, said interlocking support members forming a plurality of fenestrations on said patch body member;

said patch body member having a plurality of fenestrations formed therein and having a first radius of curvature R and a second radius of curvature R', wherein R' is larger than R; and

a reactive material selectively applied to certain fenestrations of said vascullar patch device, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow through said fenestrations.

75. (Withdrawn) An apparatus for treating vascular aneurysms, comprising:

an expandable coiled bridge device having a radially and axially resilient sinusoidal body member formed by at least one support member, said at least one support member capable of supporting vascular tissue, said at least one support member having at least a first surface;

said sinusoidal body member defining a plurality of openings and having a first radius of curvature R and a second radius of curvature R', wherein R' is larger than R; and

a reactive material selectively applied to said at least one support member, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow through said openings.

76. (Currently Amended) An apparatus that is implantable in the vasculature of a subject to treat a vascular aneurysm, said apparatus ~~An apparatus for treating vascular~~

~~aneurysms,~~ comprising:

~~an expandable helical stent having a radially and axially flexible substantially cylindrical body member with an external surface located between a first end and a second end, said cylindrical body member having at least one circumferential element between said first and said second end defining an internal lumen in communication with said first and second ends, wherein blood is capable of flowing through said internal lumen and flowing radially through said fenestrations into the aneurysm;~~

~~said at least one expandable stent capable of supporting vascular tissue;~~

~~said at least one expandable stent having openings through said external surface;~~

~~said cylindrical body member having a~~ a helical stent that is expandable from a first diameter D to ~~and~~ a second diameter D', wherein D' is larger than D, said helical stent having an external surface and an internal lumen when expanded to its second diameter D' and there being at least one opening through said external surface; and

a reactive material ~~selectively applied to not all of said of said openings on said external surface~~ on a portion of said helical stent, said reactive material having a first state of protonation prior to implantation in the body and undergoing a change to a second state of protonation after implantation in the body, said change in the state of protonation giving rise to expansion of the reactive material and resulting in a decrease in the size of at least one opening such that blood flow through said at least one opening is lessened ~~having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow through said openings~~.

77. (Currently Amended) An apparatus that is implantable in the vasculature of a subject to treat a vascular aneurysm, said apparatus ~~An apparatus for treating vascular aneurysms~~, comprising:

an expandable reticulated stent having a substantially cylindrical body member located between a first and second end, said cylindrical body member having at least one circumferential element between said first and said second end defining an internal lumen

in communication with said first and second ends, wherein blood is capable of flowing through said internal lumen and ~~flowing~~ radially out of the internal lumen through ~~said~~ fenestrations and into the aneurysm;

said cylindrical body member formed by a plurality of support members~~, said support members~~ capable of supporting vascular tissue;

said cylindrical body member having a first diameter D and a second diameter D', wherein D' is larger than D; and

a reactive material selectively applied to some but not all of said of said support members, said reactive material having a first state of protonation prior to implantation in the body and undergoing a change to a second state of protonation after implantation in the body, said change in the state of protonation of giving rise to expansion of the reactive material and resulting in a decrease in the size of some of the fenestrations such that blood flow through those fenestrations is lessened ~~a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow to the aneurysm~~.

78. (Withdrawn) An apparatus for treating vascular aneurysms, comprising:

an expandable bifurcated vascular support device having a radially and axially flexible bifurcated body member located between a first end, a second end, and a third end, said bifurcated body member having fenestrations;

said bifurcated body member comprising at least one support member having fenestrations and capable of supporting vascular tissue, said at least one support memeber having at least a first surface;

an internal lumen located within said bifurcated body member and in communication with said first, second, and third ends

said bifurcated body member having a first diameter D and a second diameter D', wherein D' is larger than D; and

a reactive material selectively applied to certain fenestrations of said at least one support member, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow to the aneurysm.

79. (Withdrawn) An apparatus for treating vascular aneurysms, comprising:

an expandable intra-aneurysmal bridge device capable of being delivered into an aneurysm, said bridge device having a flexible bridge body member;

at least two engagement members in communication with said bridge body member, said at least two engagement members capable of engaging at least one wall of said aneurysm;

a joint cooperatively formed by said at least two engagement members; and

a reactive material selectively applied to said at least two engagement members, said reactive material having a non-reacted state and a reacted state, wherein said reactive material in said reacted state is capable of increasing the resistance to blood flow to the aneurysm.

80. (Withdrawn) The apparatus of claim 79 wherein said intra-aneurysmal neck bridge device is capable of attaching to and controllably detaching from an elongated delivery apparatus selected from the group consisting of a guidewire, a tube, or a wire.

81. (Previously Amended) A method of treating a vascular aneurysm, comprising:

providing an expandable support device having a substantially cylindrical body member located between a first and second end, said cylindrical body member having at least one circumferential element between said first and said second end defining an internal lumen in communication with said first and second ends, wherein blood is capable of flowing through said internal lumen and flowing radially through said fenestrations into the aneurysm, said support device having fenestrations and a reactive material selectively applied to not all of the fenestrations of said support device;

delivering the device to a vascular aneurysm from within a blood vessel;

supporting tissue proximate said aneurysm with said device;

permitting blood to flow through said blood vessel, some of the blood flowing radially outward through said fenestrations; and

activating said reactive material disposed on said device to increase the resistance to blood flow through certain fenestrations of said support device to the aneurysm.

82. (Previously Presented) The method of claim 81 wherein said step of activating said reacting material occurs in the presence of a physiological pH of about 7.4.

83. (Previously Presented) The method of claim 81 wherein said step of activating said reactive material further comprises the step of volumetrically expanding said reacting material.

84. (Previously Presented) The method of claim 81 wherein said step of delivering the device further comprises using a catheter to deliver said device to said aneurysm.

85. (Previously Presented) The method of claim 81 wherein said step of using a catheter to deliver said device to said aneurysm further comprises using a balloon catheter to deliver said device to said aneurysm.

86. (Withdrawn) The method of claim 81 further comprising inserting said device into said aneurysm.

87. (Previously Presented) The apparatus of claim 44 wherein said expandable stent comprises a cylindrical reticulated body.

88. (Previously Presented) The apparatus of claim 44 wherein said expandable stent comprises a helical cylindrical member.

89. (Currently Amended) An apparatus for treating vascular aneurysms, comprising:

at least one expandable stent having fenestrations, said expandable stent comprising a substantially cylindrical body member located between a first and second end, said cylindrical body member further defining an internal lumen in communication with

said first and second ends, wherein blood is capable of flowing through said internal lumen and flowing radially through said fenestrations into the aneurysm;

wherein said at least one expandable stent is expandable between a first diameter D and a second diameter D', wherein D' is larger than D; and

a stimulus-expandable hydrogel selectively applied to the stent adjacent to some but not not all of said fenestrations ~~of said expandable stent~~, said stimulus-expandable hydrogel having a first state of protonation prior to implantation in the body and undergoing a change to a second state of protonation after implantation in the body, said change in the state of protonation of giving rise to expansion of the reactive material and resultant lessening the size of some of the adjacent fenestrations such that blood flow through those fenestrations is lessened ~~a non-reacted state and a reacted state, wherein said stimulus-expandable hydrogel in said reacted state is capable of increasing the resistance to blood flow through said fenestrations~~.

90. (Previously Presented) The apparatus of claim 89, wherein said stimulus-expandable hydrogel is responsive to pH.

91. (Previously Presented) The apparatus of claim 90 wherein said stimulus-expandable hydrogel is capable of obtaining an increased volume in said reacted state in the presence of a physiological pH of about 7.4.

92. (Previously Presented) The apparatus of claim 89, wherein said stimulus-expandable hydrogel comprises at least an ethylenically unsaturated monomer with an ionizable functional group.

93. (Previously Presented) The apparatus of claim 92, wherein said ionizable functional group comprises an amine.

94. (Previously Presented) The apparatus of claim 92, wherein said ionizable functional group comprises carboxylic acid.

95. (Currently Amended) A method of treating a vascular aneurysm, comprising:

providing an expandable support device having fenestrations and a stimulus-expandable hydrogel selectively applied to the support device adjacent to some but not all of the fenestrations, said stimulus expandable hydrogel having a first state of protonation prior to implantation in the blood vessel and undergoing a change to a second state of protonation after implantation in the blood vessel in contact with blood, said change in the state of protonation of the hydrogel giving rise to expansion of the hydrogel ~~of said support device~~, said support device being implantable in a blood vessel adjacent to the aneurysm;

implanting the support device in a blood vessel adjacent to the aneurysm;

~~delivering the device to a vascular aneurysm from within a blood vessel;~~

~~supporting tissue proximate said aneurysm with said device;~~

permitting blood to flow through said blood vessel, some of the blood flowing radially outward through said fenestrations and contacting the hydrogel; and

allowing the hydrogel to change from its first state of protonation to its second state of protonation, thereby resulting in expansion of the hydrogel and lessening of the size of the adjacent fenestrations, and thereby increasing ~~activating said stimulus-expandable hydrogel disposed on said device to increase~~ the resistance to blood flow through ~~certain~~ those fenestrations ~~of said support device~~ to the aneurysm.

96. (Previously Presented) The method of claim 95 wherein said step of activating said stimulus-expandable hydrogel occurs in the presence of a physiological pH of about 7.4.

97. (Previously Presented) The method of claim 95 wherein said step of activating said stimulus-expandable hydrogel further comprises the step of volumetrically expanding said stimulus-expandable hydrogel.

98. (Previously Presented) The method of claim 95, wherein said stimulus-expandable hydrogel applied to said fenestrations comprises at least an ethylenically unsaturated monomer with an ionizable functional group.

99. (Previously Presented) The apparatus of claim 96, wherein said ionizable functional group comprises an amine.

100. (Previously Presented) The apparatus of claim 96, wherein said ionizable functional group comprises carboxylic acid.